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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/030,111

06/03/2002

Tomasz Andrzej Nasilowski

NAS13001/JEK

6784

23364

7590

11/16/2004

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EXAMINER

KAO, CHIH CHENG G

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/030,111

Applicant(s)

NASILOWSKI ET AL.

Examiner

Chih-Cheng Glen Kao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 September 2004 and 14 October 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 26-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. Since the Amendment to the Specification filed September 29, 2004, was not entered due to the lack of markings, the drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figs. 4 and 7, #100. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 26, 36, 42, 43, and 47 are objected to because of the following informalities, which appear to be minor errors creating grammatical and lack of antecedent basis problems.

In the following format (location of objection; suggestion for correction), the following suggestions may obviate their respective objections: (claim 26, lines 8-9, "the inspection device"; replacing "device" with - -unit- -), (claim 36, line 6, "transmitted, emitted or"; inserting

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a comma after “emitted”), (claim 36, line 7, “the product flow”; replacing “flow” with - -stream- -), (claim 36, line 10, “the inspection device”; replacing “device” with - -unit- -), (claim 36, lines 13-14, “the product flow”; replacing “flow” with - -stream- -), (claim 42, lines 1-2, “the bundles”; replacing “bundles” with - -bundle- -), (claim 43, line 2, “several of said bundles”; deleting “of said”), (claim 47, line 6, “the inspection unit”; inserting a comma after “unit”), and (claim 47, line 10, “the inspection device”; replacing “device” with - -unit- -).

For purposes of examination, the claims have been treated as such. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 46 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms “large” and “high” in claim 46 are relative terms, which render the claim indefinite. The terms “large” and “high” are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is indefinite as to what magnitude the ratio would have to be so that it is considered large. It is also indefinite as to what magnitude the numerical aperture would have to be so that it is considered high.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 26, 32, 36, 37, and 45-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanc et al. (US Patent 5729473) in view of Davis et al. (US Patent 6078018).

5. Regarding claims 26, 36, and 47, Blanc et al. discloses a sorting device (Title) comprising an inspection unit (Fig. 1) arranged to inspect products (Title), the inspection unit including a waveguide transmission system (Fig. 1, #10, and Fig. 2, #23-25) with at least two common waveguides for a transmission part (Fig. 1, #10), a waveguide detection part (Fig. 2, #17-19), and at least two light sources (Fig. 1, #7, and Fig. 2, #13 and 14) providing light to the system, the system including a rotating polygon (Fig. 2, #24) arranged and positioned to align and reflect light from said light sources onto the products in a product stream (Fig. 2, #1) transported past the inspection device; a transport system (Fig. 2, #1) configured to transport the products in the product stream towards the inspection unit; and rejecting (col. 6, lines 54-58).

However, Blanc et al. does not disclose a rejection unit.

Davis et al. teaches a rejection unit (Fig. 1, #12 and 14).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Blanc et al. with the rejection unit of Davis et al.,

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since one would be motivated to incorporate this to more easily arrange products that rejected into a separate pile (Fig. 1, #10 and 14) as implied from Davis et al.

6. Regarding claim 32, Blanc et al. further discloses the light sources radiating light of a different wavelength (col. 3, lines 57-61).

7. Regarding claim 37, Blanc et al. further discloses a bundle of optical waveguides (Fig. 1, #2 and 7, and Fig. 2, #17).

8. Regarding claim 45, Blanc et al. further discloses optical waveguides comprising fibers with a numerical aperture (Fig. 1, #10).

9. Regarding claim 46, Blanc et al. further discloses the inspection unit at the transmission side thereof provided with waveguide elements (Fig. 1, #10) transmitting light at least at the rotating polygon (Fig. 2, #24).

10. Regarding claim 48, Blanc et al. further discloses a lens system (Fig. 1, #22) arranged to focus emitted light onto the products and focus the light (Fig. 1, #21) received thereby onto the waveguides.

11. Regarding claim 49, Blanc et al. further discloses two additional waveguide systems (Fig. 1, #10) provided on the transmission and detection side of the inspection unit (Fig. 1, #7).

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12. Claims 27, 28, and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanc et al. in view of Davis et al. as applied to claim 26 above, and further in view of Reid et al. (US Patent 3786266) and Kumar (US Patent 6545240).

13. Regarding claim 27, Blanc et al. as modified above suggests a device as recited above. Blanc et al. further discloses coupling-in optical elements arranged to focus light from at least two sources (Fig. 1, #7, and Fig. 2, #22), a combining unit for combining light into at least one light beam (Fig. 2, #23), and at least one focusing unit (Fig. 2, #22 and 23) guiding the at least one light beam towards the rotating polygon (Fig. 2, #24).

However, Blanc et al. does not disclose putting the light into optical waveguides and a focusing unit arranged to focus the light beam onto the products in the product stream.

Reid et al. teaches putting light into optical waveguides (Figs. 4 and 5, #13 and 14). Kumar teaches a focusing unit (Fig. 6, #86) arranged to focus the light beam onto the products in the product stream (col. 9, lines 53-58).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Blanc et al. with the waveguides of Reid et al., since one would be motivated to incorporate these to provide more flexibility (Fig. 4) as implied from Reid et al.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device Blanc et al. with the focusing unit of Kumar,

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since one would be motivated to incorporate this to simplify design geometries for collection optics (col. 9, lines 62-65) as shown by Kumar.

14. Regarding claim 28, Blanc et al. further discloses laser sources (Fig. 2, #13 and 14).

15. Regarding claim 33, Blanc et al. would necessarily have connectors to the coupling-in optical elements (Fig. 2, #22), since the optical elements must be connected to something in order to be aligned with the rest of the components.

16. Regarding claim 34, Blanc et al. further discloses the combining unit including at least one dichroic element (col. 7, lines 36-37).

17. Regarding claim 35, Blanc et al. further discloses the combining unit being an optical waveguide element (Fig. 2, #22). Regarding the term “fused”, note that the manner in which a device is formed is not germane to the issue of patentability of the device itself. Therefore, “fused” has not been given patentable weight. Also note that this element must be connected to something in order to be aligned with the rest of the components.

18. Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanc et al. in view of Davis et al., Reid et al., and Kumar as applied to claim 27 above, and further in view of Shimizu (US Patent 5960142).

Blanc et al. as modified above suggests a device as recited above.



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However, Blanc et al. does not disclose semiconductor or solid matter lasers cooled by a Peltier element.

Shimizu discloses semiconductor or solid matter lasers cooled by a Peltier element (col. 1, lines 5-10).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Blanc et al. with the lasers and Peltier elements of Shimizu, since one would be motivated to incorporate these to better ensure stable operation of the laser due to temperature dependency of the optical output (col. 1, lines 10-25) as shown by Shimizu.

19. Claims 38, 39, and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanc et al. in view of Davis et al. as applied to claim 37 above, and further in view of Ulrichsen et al. (US Patent 6060677).

20. Regarding claim 38, Blanc et al. as modified above suggests a device as recited above. Blanc et al. further discloses the extremities of the bundle of optical waveguides (Fig. 2, bottom of #17) located in an image plane of a lens system (Fig. 2, #21) and arranged to receive a signal formed by the products projected onto at least one of the waveguide extremities.

However, Blanc et al. does not disclose receiving an image.

Ulrichsen et al. teaches receiving an image (col. 6, lines 50-52).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Blanc et al. with the imaging of Ulrichsen et al.,

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since one would be motivated to incorporate this to provide more information about the products going through the sorter via simulations (col. 6, lines 50-52) as implied from Ulrichsen et al.

21. Regarding claim 39, Blanc et al. further discloses the bundle divided into separate parts (Fig. 1, #10).

22. Regarding claim 41, Blanc et al. further discloses the separate parts arranged in a configuration separating each part by avoiding cross-coupling (Fig. 1, #10).

23. Regarding claim 42, Blanc et al. further discloses parts (Fig. 1, #10) led separately to detectors and/or optical splitting elements (Fig. 1, #7).

24. Regarding claim 43, Blanc et al. further discloses bundles comprising different parts (Fig. 1, #2, and Fig. 2, #17) arranged for use after a signal is divided into two or more signals by optical splitting elements (Fig. 1, #16).

25. Regarding claim 44, Blanc et al. further discloses the splitting elements with outgoing waveguides (Fig. 2, #17).

26. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blanc et al. in view of Davis et al. and Ulrichsen et al. as applied to claim 38 above, and further in view of Reid et al.

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Blanc et al. as modified above suggests a device as recited above.

However, Blanc et al. does not disclose a concentric bundle.

Reid et al. teaches a concentric bundle (Figs. 4 and 5, #13 and 14).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Blanc et al. with the concentric bundle of Reid et al., since one would be motivated to incorporate this to provide a more flexible device (Fig. 4) as implied from Reid et al.

#### ***Response to Arguments***

27. Applicant's arguments with respect to claims 26-49 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 6734383 discloses a sorting device (Fig. 1).

Inadvertently, US Patent 6509537 was not cited in the PTO-892 mailed March 29, 2004.

It has been cited in the PTO-892, which has been enclosed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

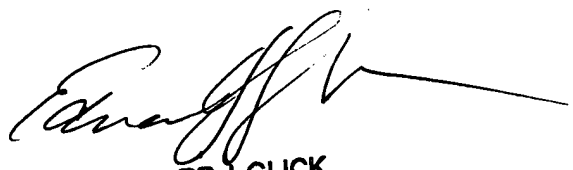
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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